EXECUTIVE ORDER 12856

Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements

THIRD ANNUAL REPORT

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U.S. Department of Energy

Office of Environment, Safety & Health

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Introduction

On August 3, 1993, President Clinton signed Executive Order 12856, *Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements*, "pledging the federal government to protect the environment by preventing pollution at the source." Executive Order 12856 directs all federal agencies, including the Department of Energy (DOE), to comply with the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and the Pollution Prevention Act of 1990 (PPA).

This report constitutes the Department's third annual progress report to the Administrator of the EPA as directed by Section 4-402 of Executive Order 12856. The report includes information DOE sites reported to the Toxic Chemical Release Inventory (TRI) for reporting year 1995 and describes DOE's pollution prevention activities during 1995 through early 1997.

On May 3, 1996, the Secretary of Energy issued Department-wide source reduction, recycling and affirmative procurement goals (Appendix A).

The DOE pollution prevention program mission is to minimize the generation and release of pollutants to the environment by implementing cost-effective pollution prevention technologies, practices, and policies with partners in government and industry. In a December 27, 1994, memorandum, the Secretary of Energy embraced "pollution prevention not only as a strategy to reduce waste generation but also as the preferred approach to protect the environment, reduce future risks and costs associated with managing wastes and pollutants." The policies and practices outlined in the DOE pollution prevention program are largely implemented in the field, with Headquarters serving an oversight and coordinating role.

While DOE is fully committed to fulfilling the requirements of Executive Order 12856, the releases and transfers of TRI chemicals represent a small portion of DOE's total waste generation profile. Therefore, many of DOE's pollution prevention efforts are focused on other, more significant wastes streams, including: radioactive, mixed wastes, hazardous, and sanitary wastes. In a May 3, 1996, memorandum, the Secretary of Energy demonstrated the Department's continued commitment to pollution prevention by setting additional complex-wide goals to be achieved by December 31, 1999 (Appendix A). To meet these commitments, DOE has prepared the *1996 Pollution Prevention Program Plan* which establishes priorities and direction at Headquarters, the Operations Offices, and at the contractor and laboratory sites.

DOE has had a long-standing commitment to implementing the principles contained in Executive Order 12856. DOE's contractor-operated facilities have been active in complying with EPCRA since its passage in 1986. The Department has provided guidance and training materials on the general requirements of EPCRA and specific guidance and training on TRI reporting. DOE has led the federal sector in TRI reporting by voluntarily committing to report TRI releases prior to the issuance of the Executive Order and has worked with the Environmental Protection Agency (EPA) on resolving issues of federal facility TRI reporting.

DOE was honored along with 20 companies with an "Environmental Champion" award in December 1995. The award, which is co-sponsored by the U.S. Environmental Protection Agency and McGraw-Hill Company's *Chemical Engineering* and *Environmental Engineering World* Magazines, was presented to DOE for its success in reducing toxic chemical emissions under EPA's 33/50 program. DOE was the only federal agency participant in the program, and this participation was recognized in September 1996, when DOE received the National Performance Review "Hammer" award.

In addition, DOE has involved nearly all departmental organizations in pollution prevention activities at the staff level through the Waste Reduction Steering Committee and at the senior management level through the Pollution Prevention Executive Board, chaired by the Deputy Secretary of Energy. On July 19, 1996, the Energy Management Steering Committee (EMSC) was formed. The goal of the EMSC is to assist the Executive Board in the review, coordination, and accomplishment of Headquarters energy management and utilities activities.

E.O. 12856 Applicability

As stated in Section 2-202 of Executive Order 12856, DOE satisfies the definition of a federal agency as an Executive agency. DOE also satisfies the requirement in Section 1-102 of the Executive Order which pertains to owning or operating facilities. Therefore, the provisions of Executive Order 12856 are applicable to the Department and its sites.

Section 3-302 of the Executive Order directs "covered facilities" to develop pollution prevention plans no later than the end of 1995. For purposes of this section, DOE has defined a "covered facility" to be any DOE site which reports under EPCRA Section 313, TRI reporting. The Department has chosen this interpretation of "covered facilities" to focus planning efforts on the sites which must reduce their releases and transfers of toxic chemicals in order for DOE to reach its Department-wide reduction goals. For purposes of all other sections of the Executive Order, a "covered facility" is any facility which meets one or more of the reporting requirements of EPCRA Sections 302, 304, 311-312, and 313.

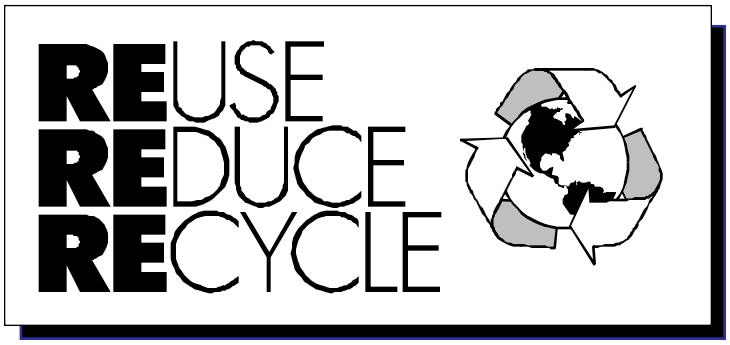
Further, Executive Order 12856, Section 2-203, and EPA's interpretive guidance define pollution prevention to be "source reduction", as defined in the PPA, and other practices that reduce or eliminate the creation of pollutants through: 1) increased efficiency in the use of raw materials, energy, water, or other natural resources; or 2) protection of natural resources by conservation.

Within the Department, however, pollution prevention includes all aspects of source reduction and incorporates waste minimization by expanding beyond the EPA definition of pollution prevention to include recycling. The Department's interpretation of pollution prevention is consistent with the 1996 International Organization for Standardization (ISO) Document 14001, *Environmental Management Systems-Specification with Guidance for Use*, which defines pollution prevention to be the "use of processes, practices, materials or products that avoid, reduce or control pollution, which may include recycling..." DOE's definition is also consistent with the Council on Environmental Quality's definition of pollution prevention.

DOE's interpretation of pollution prevention agrees with the definition in ISO 14001 which includes recycling.

Pollution prevention can be applied to all DOE pollution-generating activities, including manufacturing and production operations; facility operations, maintenance, and transportation; laboratory research; research, development and demonstration; weapons dismantlement; decontamination and decommissioning; and legacy waste and contaminated site cleanup.

The Department takes no other exceptions in interpreting the applicability and definitions of Executive Order 12856. The Department understands that Executive Order 12856 in no way alters the EPCRA and PPA reporting obligations of DOE government-owned/contractor-operated facilities.



DOE Pollution Prevention Policy & Strategy

The DOE 1996 Pollution Prevention Program Plan establishes six immediate priorities to be completed by FY 1998.

On May 3, 1996, the Secretary of Energy issued the *1996 Department of Energy Pollution Prevention Program Plan*, along with a Department-wide memorandum outlining the source reduction, recycling, and affirmative procurement goals contained therein. Appendix A of this report contains the complete memorandum. The goals, to be achieved by December 31, 1999, using calendar year 1993 as a baseline, include 50 percent reductions in radioactive, low-level mixed, and hazardous wastes from routine operations; a 50 percent reduction in total releases and off-site transfers of toxic chemicals; a 33 percent reduction in sanitary waste from routine operations; and a 33 percent recycling rate for all sanitary waste. The goals are coupled with site performance measures to assess progress made in achieving the goals.

As the principal cross-cutting guidance to DOE Headquarters, Operations Office, laboratory, and contractor management, the 1996 Program Plan establishes six immediate priorities to be completed by fiscal year 1998. The six priorities and DOE's progress on completing the priorities are summarized below.

Senior Management Commitment. Guidance was issued to the sites for completion of their triennial Pollution Prevention Plans. Further, the Board initiated two pilot programs: re-engineering waste management and a generator set-aside fee program whereby waste generators are charged a fee, based upon the amount and type of waste generated. The fees are used to fund pollution prevention projects.

Site Goals. Sites were required to include in their pollution prevention plans quantitative, site-specific source reduction and recycling goals, designed to help meet the overall DOE goals.

Performance Measures. Each fiscal year, the Secretary reaches an agreement with the President which lists measures by which the Department's performance will be evaluated. In fiscal year 1996, the Department completed all of the pollution prevention items in the performance agreement, including issuing pollution prevention measures and waste reduction goals, purchasing of EPA-designated products containing recycled or recovered materials, and initiating pollution prevention projects.

Cost Saving Projects. The Department funded 22 high return-on-investment projects in FY 1996. These projects are expected to save the Department $100 million over the next ten years.

Design for Pollution Prevention. Pacific Northwest National Laboratory completed a software tool, P2 EDGE, to assist engineers and designers in their efforts to incorporate pollution prevention strategies into their new products, processes, and facilities.

Ensure Compliance. DOE's Office of Environmental Policy and Assistance provides sites with policy, guidance, training opportunities and other technical assistance on compliance with applicable Federal, State, and departmental regulations governing pollution prevention.

The *1996 Pollution Prevention Program Plan* builds upon the pollution prevention strategy that was issued in December 1994 as directed by Section 3-301 of Executive Order 12856. Appendix B of this report contains the full text of the DOE strategy. The strategy identifies departmental objectives, designates a senior manager responsible for the coordination of the Department's efforts in pollution prevention, and includes the Secretary of Energy's December 1993 pollution prevention policy statement committing DOE to pollution prevention. The DOE pollution prevention strategy goes beyond the provisions of Executive Order 12856 by addressing other related environmental Executive Orders.

In accordance with Section 5-508 of Executive Order 12856, which encourages public participation, a *Federal Register* Notice of Availability was issued announcing publication of the Department of Energy Pollution Prevention Strategy. The strategy is available from the Department's on-line pollution prevention information clearinghouse called EPIC at http://epic.er.doe.gov/epic.

Toxic Chemical Reduction Goals & Baseline

The Department's *1996 Pollution Prevention Program Plan* commits DOE to the 50% reduction goal for releases of toxic chemicals to the environment and transfers of toxic chemicals for treatment and disposal across the DOE complex by December 31, 1999, as directed by Executive Order 12856. To assist in the Department-wide effort, the DOE site pollution prevention plans will address site-level goals for reducing their releases and transfers of listed toxic chemicals.

Further, Executive Order 12856 explicitly states that the baseline year for measuring progress toward the December 1999 goal shall be no later than the 1994 reporting year. Due to the Department's early commitment to TRI reporting and voluntary pollution prevention activities, DOE has seized a leadership opportunity by establishing 1993 as its baseline year for measurement, one year ahead of all other federal agencies, and one year ahead of the Executive Order requirement.

For the purpose of measurement, the Department's baseline is defined by the 23 DOE sites reporting 28 listed toxic chemicals on the 83 Form R reports filed with EPA for the 1993 reporting year. This 1993 baseline is fixed and is amended only in the event that a site submits revised Form R reports. Future measurement against the 1993 baseline will include all sites reporting listed toxic chemicals for each reporting year regardless of whether they reported in the baseline year. Therefore, if a site which did not report in 1993 initiates reporting with the 1994 reporting year, that site's data will be included in the DOE total releases and transfers to be compared against the 1993 baseline. Likewise, the baseline will remain unchanged if a site which reported in the 1993 baseline ceases to report in 1994.

The 50% reduction goal specified in Executive Order 12856 applies only to the total releases of toxic chemicals to the environment and transfers of toxic chemicals for treatment and disposal. It does not include off-site transfers for recycling and energy recovery. Thus, only the releases and off-site transfers reported under Sections 8.1 and 8.7 of the annual TRI Form R report are used in measuring progress toward the 1999 reduction goal. Section 8.1 (quantity released) of the Form R report is the amount of toxic chemicals directly discharged to air, water, land, and injected underground at the site. Section 8.1 also includes amounts sent off-site for disposal. Section 8.7 (quantity treated off-site) of the Form R report is the amount of toxic chemicals sent off-site to be treated, including quantities sent to publicly owned treatment works.

In 1996, site revisions, withdrawals, and validation with EPA's Toxic Release Inventory System (TRIS) resulted in a small adjustment to the baseline. The previously reported baseline of 4,677,836 pounds has been amended to 4,677,346 pounds.

To reach the 50% reduction goal by December 31, 1999, DOE must achieve an overall 2,338,673 pound reduction in the reported releases of toxic chemicals to the environment and transfers of toxic chemicals for treatment and disposal. To achieve this reduction, the Department needs to focus efforts on the specific chemicals and sites which contribute the largest amounts to the complex-wide total each year.

The Department has taken a leadership opportunity by establishing 1993 as its baseline year, one year ahead of all other federal agencies.

1995 TRI Reporting

From 1993 to 1995, DOE has achieved an 87% reduction in the complex-wide releases of toxic chemicals to the environment and transfers of toxic chemicals for treatment and disposal.

For 1995, 20 DOE sites filed a total of 54 Form R reports for 23 listed TRI chemicals. Four sites, Argonne, Pantex, Stanford, and Rocky Flats which met reporting requirements in 1994, did not meet reporting thresholds for any TRI chemicals in 1995. Hanford, which did not meet reporting thresholds in 1994 did for one chemical in 1995. Tables 1 and 2 show the 1995 total of releases and transfers (Form R sections 8.1 plus 8.7) as compared to the 1993 baseline by chemical and by site.

The 1995 complex-wide total of releases and transfers for treatment and disposal is 586,463 pounds. This represents an 87% (4.1 million pounds) reduction in releases and transfers from the 1993 baseline. However, a large part of this reduction was not achieved through source reduction methods as directed by Executive Order 12856. Approximately 3.3 million pounds of the reduction in methanol releases is due to the Naval Petroleum Reserve #1's implementation, in 1994, of better measurement practices for underground injection of methanol. Deletions of acetone and non-aerosol forms of sulfuric acid, and non-aerosol forms of hydrochloric acid from the TRI list of chemicals are largely the reason for reported reductions in these chemicals.

However, if the Naval Petroleum Reserve #1's methanol reports and all the sulfuric acid, acetone, and hydrochloric acid reports for 1993 -1995 are excluded, DOE has achieved a 56% reduction in reported releases and transfers complex-wide. While reductions in chemicals at some sites can be attributed to ceased or decreased production/operation, some sites continue to achieve true source reductions in TRI chemicals through: chemical substitutions; equipment and process modifications; and recycling rather than disposing of chemicals. Figure 2 identifies some of the source reduction methods implemented by DOE sites resulting in reductions in TRI chemicals between 1994 and 1995.

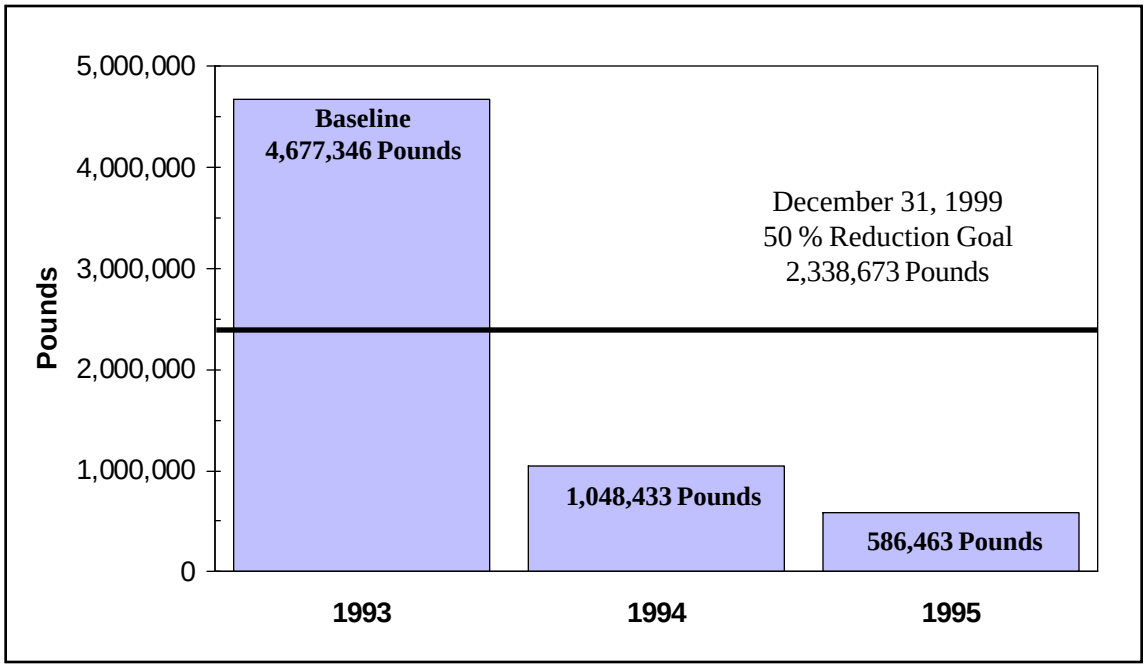


Figure 1. Total DOE TRI Releases and Transfers

Table 1: Comparison of 1995 & 1993 DOE TRI Reporting by Toxic Chemical (in pounds)

TRI Chemical	1993 Section 8.1+8.7	1995 Section 8.1+8.7	1993-1995 % Change
Methanol	3,665,979	362,800	(90%)
Sulfuric Acid	311,903	–	(100%)
Dichlorotetrafluoroethane	170,000	–	(100%)
Hydrochloric Acid	154,745	1,350	(99%)
Nitric Acid	126,268	4,148	(97%)
Ammonia	113,350	59,421	(48%)
1,1,1- Trichloroethane	20,405	–	(100%)
Chlorine	18,003	2,158	(88%)
Xylene (mixed isomers)	16,644	30,918	86%
Trichloroethylene	15,900	–	(100%)
Toluene	12,408	20,076	62%
Methyl Ethyl Ketone	9,800	–	(100%)
Dichloromethane	9,289	–	(100%)
Methyl Isobutyl Ketone	9,004	–	(100%)
Lead	8,666	6,661	(23%)
Hydrogen Fluoride	3,519	4,415	25%
Ethylene Glycol	2,808	4,833	72%
Acetone	1,930	–	(100%)
Trichlorofluoromethane	1,800	0	(100%)
Methyl Tert-Butyl Ether	1,674	16	(99%)
1,2,4- Trimethylbenzene	573	529	(8%)
Benzene	378	25,740	6,710%
Phosphoric Acid	50	–	(100%)
Chlorodifluoromethane	–	30,761	N/A
Freon 113	–	3,800	N/A
Other TRI Chemicals	2,250	28,837	1,182%
TOTAL	4,677,346	586,463	(87%)

Understanding our data...

These three TRI chemicals represent 77% of the DOE 1995 total releases and transfers for treatment and disposal.

Table 2: Comparison of 1995 & 1993 DOE TRI Reporting by Site (in pounds)

DOE Site	1993 Section 8.1+8.7	1995 Section 8.1+8.7	1993-1995 % Change
Naval Petroleum Reserve #1	3,782,920	363,447	(90%)
Idaho National Engineering Lab[1]	369,454	3,850	(99%)
Portsmouth Gas. Diff. Plant	171,918	2,034	(99%)
Energy Tech. Engr. Center	101,249	28,153	(72%)
Savannah River Site	79,372	17,143	(78%)
Oak Ridge Y-12 Plant	74,201	36,384	(51%)
Pinellas Plant	45,824	–	(100%)
Stanford Linear Accelerator	12,300	–	(100%)
Oak Ridge National Lab	7,353	6,291	(14%)
Oak Ridge K-25 Site[2]	6,388	102	(98%)
Brookhaven National Lab	5,935	2,484	(58%)
Los Alamos National Lab	5,570	1,992	(64%)
Rocky Flats Plant	3,555	–	(100%)
Fermi National Accelerator	3,157	2,163	(31%)
Kansas City Plant	1,400	30,761	2,097%
Naval Petroleum Reserve #3	95	81,692	85,892%
Argonne National Lab-East	4,007	–	(100%)
West Valley Demonstration Proj.	–	367	N/A
Other DOE Sites	2,648	9,600	263%
TOTAL	4,677,346	586,463	(87%)

NPR-1 and NPR-3 account for 76% of DOE's 1995 total releases and transfers for treatment and disposal.

[1] Now known as Idaho National Engineering and Environmental Lab
[2] Now known as East Tennessee Technology Park
The dashes (--) indicate no reports were submitted for these chemicals.
N/A indicates not applicable.

Hanford Site

Nitric acid was generated as a byproduct of nuclear fuel dissolution and chemical separation processes. Previously this waste had been reused, but in 1995, it was not needed, and was sold to a commercial nuclear fuel reprocesser for reuse.

West Valley Demonstration Project

During 1995, modifications were made to a heating, ventilating, and air conditioning system, 190 liters of previously drained **ethylene glycol** were reused in the system.

Oak Ridge National Laboratory (ORNL)

In 1995, ORNL convened a lead task team to develop policies and strategies for the beneficial reuse of its stock of clean and radioactively contaminated **lead**. ORNL has since inventoried existing lead stock, stopped the purchase of new lead and reopened its lead shop to provide for its researchers. In 1996, ORNL shipped 108,864 kg of lead brick to the Thomas Jefferson Accelerator Facility to be used as shielding. ORNL also transferred 7,264 kg of lead to INEEL for the manufacture of ten prototype containers for the transport and storage of radioactive waste.

Kansas City Plant (KCP)

The plant eliminated **1,1,1-trichloroethane** from all remaining processes, with the exception of EPA-mandated environmental test methods. In addition, the last vapor degreaser using **trichloroethylene** was removed from operation. KCP received approval to replace trichloroethylene with a naturally occurring, citrus-based solvent for the cleaning of a major high-voltage electrical assembly.

Savannah River Site (SRS)

SRS continues to reduce emissions from **xylene** and **toluene** through product substitution. For example, SRS uses latex paint instead of solvent based paint. In addition, **nitric acid** releases fell in 1995 in response to the curtailment of separations activities.

Fermi National Accelerator

In 1995, the use of **Freon 113** for cleaning was essentially eliminated. In addition, Fermi implemented a process which recovered and recycled **trichlorofluoromethane**.

Figure 2. Examples of DOE Source Reduction Activities

Idaho National Engineering and Environmental Laboratory (INEEL)

The fuel reprocessing program at INEEL which used **methyl isobutyl ketone** was discontinued. With this change in mission, virtually all uses and releases of methyl isobutyl ketone at the INEEL are nonexistent. Also, RCRA regulated hazardous scrap metal, such as **beryllium**, **cadmium**, and **lead,** was recycled.

Lawrence Livermore National Laboratory (LLNL)

During 1995, LLNL replaced **Freon 113** with alternative solvents combined with alternative cleaning methods (i.e., ultrasound) in most small parts cleaning operations.

Sandia National Laboratories-NM

In 1995, Sandia implemented a variety of processes to recycle **aluminum**, **copper**, and **lead**.

Energy Technology Engineering Center (ETEC)

In 1995, ETEC reduced releases of **ammonia** by limiting plant operation and improving plant equipment and performance. Specifically, the seals in various pumps and turbine were reworked or replaced to minimize ammonia leaks.

Naval Petroleum Reserve #1 (NPR-1)

NPR-1, where feasible, replaced **ethylene glycol** with a less hazardous/non-TRI chemical such as triethylene glycol or propylene glycol. NPR-1 has replaced a solvent cleaner containing **toluene** with other products that do not contain any TRI listed chemicals. This has accounted for a reduction in the use and release of toluene.

Los Alamos National Laboratory (LANL)

By replacing caustic soda and **sulfuric acid** with buffer salts as demineralizers in boilers at the steam plant, LANL is avoiding a significant amount of hazardous materials use annually.

Brookhaven National Laboratory (BNL)

In 1993, two departments at Brookhaven implemented a process which recycles **methanol** through distillation. In 1995, this process expanded into an additional department. In addition, the generation of waste **1,1,1-trichloroethane** was reduced through material substitutions and improved handling.

EPCRA Reporting

Executive Order 12856 directs all federal facilities to comply with the EPCRA reporting requirements described below, regardless of Standard Industrial Classification (SIC) code. EPCRA contains four major provisions: planning for chemical emergencies (Sections 302-303); emergency notification of chemical accidents and releases (Section 304); reporting of hazardous chemical inventories (Sections 311 and 312); and toxic chemical release inventory reporting (Section 313).

These provisions require DOE sites to notify state emergency response commissions (SERCs) and local emergency planning committees (LEPCs) of the presence of potentially hazardous substances on their sites and to report on the inventories and environmental releases of those substances. The intent of these requirements is to provide the public with information on hazardous chemicals in their communities, enhance public awareness of chemical hazards, and facilitate development of state and local emergency response plans.

For 1995, DOE collected additional EPCRA compliance information from 15 ASERs.

While both Executive Order 12856 and DOE policy direct all "covered" facilities to comply with these EPCRA provisions prior to 1995, quantitative information was only available for the "covered" DOE facilities which reported under EPCRA section 313. Beginning with the 1995 Annual Site Environmental Reports (ASERs), sites provided more complete information on EPCRA compliance. The information presented in Table 4 and summarized below was collected as part of an internal validation of the 1995 DOE TRI data reported by the 20 DOE sites (see Table 3) and information obtained from 15 additional sites that was reported in the 1995 ASERs.

EPCRA 302-303. Executive Order 12856 states that federal facilities were to submit their emergency planning notification to the cognizant SERC and LEPC by March 3, 1994 (EPCRA 302). Additionally, facilities were directed to submit information for the committees to prepare Comprehensive Emergency Response Plans by August 3, 1994 (EPCRA 303). For 1993 and 1994, 26 DOE sites either submitted the appropriate new or revised information or were not required to submit information because they fulfilled this requirement in a prior year. For 1995, the number of DOE sites that submitted this information increased to 28.

Table 3: The 20 DOE Sites Reporting under EPCRA 313 During 1995

Brookhaven National Laboratory	Naval Petroleum Reserve #3
Energy Technology Engineering Center	Oak Ridge K-25 Site[2]
Fermi National Accelerator	Oak Ridge National Laboratory
Fernald Environmental Management Project	Oak Ridge Y-12 Plant
Hanford Site	Pinellas Plant[1]
Idaho National Engineering	Portsmouth Gaseous Diffusion Plant
and Environmental Laboratory	Sandia National Laboratory-New Mexico
Kansas City Plant	Savannah River Site
Lawrence Livermore National Laboratory	Weldon Spring Site[1]
Los Alamos National Laboratory	West Valley Demonstration Project
Naval Petroleum Reserve #1	

[1] Pinellas Plant and Weldon Spring Site originally reported one chemical under EPCRA 313 in 1995, but later withdrew this report due to the deletion of non-aerosol forms of hydrochloric acid from the 1995 TRI list of chemicals. Pinellas and Weldon are included on this list because they were part of DOE's 1995 TRI data validation exercise and responded with information on their compliance with the other sections of EPCRA.

[2] Now Known as the East Tennessee Technology Park (ETTP)

EPCRA 304. In January 1994, federal facilities were to begin submitting emergency notifications of releases of Extremely Hazardous Substances (EHSs) (EPCRA 304). In 1993, 11 DOE sites submitted notifications for EHS releases while 14 sites did not have releases requiring such a notification. For 1994, 12 sites submitted notifications and 14 were not required. For 1995, 6 sites indicated they reported under this section, while 22 sites were not required.

EPCRA 311-312. By August 3, 1994, Executive Order 12856 directed facilities to submit Material Safety Data Sheets (MSDSs) as required by EPCRA Section 311. Also, by March 1, 1995, federal facilities were to submit an emergency and hazardous chemical inventory form (Tier I/II report) under EPCRA 312. For 1993, 24 DOE sites complied with these requirements, while 2 reported that they were not required to fulfill these requirements. In 1994, 25 DOE sites were required to report and only 1 site indicated that it was not required. For 1995, 27 DOE sites complied with the EPCRA 311-312 requirements, while 4 sites were not required to comply with these sections.

EPCRA 313. By July 1, 1995, federal facilities meeting reporting requirements were to submit TRI Form R reports. As previously discussed, 23 DOE sites complied with this section one year ahead of the Executive Order requirement by reporting 1993 releases and transfers of toxic chemicals in July 1994. Two sites did not meet reporting thresholds and 1 site did not have the resources to report for 1993. In 1994, 22 sites reported, and 4 sites were not required to report. For 1995, 18 DOE sites reported under EPCRA 313, and 17 sites did not meet reporting thresholds. Reporting Year 1996 TRI data was reported in August 1997 and will be reported in next year's Annual Report.

Table 4: Summary of 1993 and 1994 EPCRA Reporting by 26 DOE Facilities and Summary of 1995 EPCRA Reporting by 35 DOE Facilities.

	YES	NO	Not Required
1993			
EPCRA 302-303: Planning Notification	14 Sites	0 Sites	12 Sites[a]
EPCRA 304: EHS Release Notification	11 Sites	1 Site	14 Sites[b]
EPCRA 311-312: MSDS/Chemical Inventory	24 Sites	0 Sites	2 Sites
EPCRA 313: TRI Reporting	23 Sites	0 Sites	3 Sites[c]
1994			
EPCRA 302-303: Planning Notification	15 Sites	0 Sites	11 Sites[a]
EPCRA 304: EHS Release Notification	12 Sites	0 Sites	14 Sites[b]
EPCRA 311-312: MSDS/Chemical Inventory	25 Sites	0 Sites	1 Site
EPCRA 313: TRI Reporting	22 Sites	0 Sites	4 Sites[c]
1995			
EPCRA 302-303: Planning Notification	12 Sites	0 Sites	16 Sites[a]
EPCRA 304: EHS Release Notification	6 Sites	0 Sites	22 Sites[b]
EPCRA 311-312: MSDS/Chemical Inventory	27 Sites[d]	0 Sites	4 Sites
EPCRA 313: TRI Reporting	18 Sites	0 Sites	17 Sites[c]

[a] EPCRA 302-303 notification requirement was fulfilled in a prior year
[b] Sites did not have EHS releases requiring EPCRA 304 notification
[c] Sites did not exceed the EPCRA 313 manufacture, process, or otherwise use thresholds
[d] Three sites indicated “yes” for reporting under EPCRA section 312 only

Reviews & Compliance

Pursuant to internal directives, DOE sites prepare ASERs which address site compliance with EPCRA as well as other environmental statutes.

Sections 3-302(d), 5-502, 5-503, and 5-506 of Executive Order 12856 pertain to ensuring compliance with the provisions of the order. Specifically, these sections direct agencies to: 1) conduct assessments as necessary to ensure the development of site pollution prevention plans; 2) take all necessary actions to prevent pollution; 3) conduct internal reviews and audits to monitor compliance with the EPCRA and PPA reporting requirements; and 4) when the agency is notified of non-compliance, achieve compliance as promptly as practicable.

As discussed on the next page, the Department had an internal mechanism, DOE Order 5400.1, "General Environmental Protection Program", in place (in 1998) prior to Executive Order 12856 which required the development of site pollution prevention plans. Second, the Department is taking the necessary steps to prevent pollution as evidenced by its commitment in the DOE pollution prevention policy to "reduce the generation of all waste streams." This leadership has been further demonstrated by the May 3, 1996, secretarial memorandum which defines additional goals developed to support the DOE policy.

The Department has two occurrence reporting systems which track notices of non-compliance, notices of violation and similar documents which field sites receive from state and federal regulators. During the period from January to December 1996, there were no reported violations or reports of non-compliance with EPCRA.

In another monitoring effort, DOE sites participated in a survey on the burden of EPCRA section 313 reporting. Sites responded to a DOE survey that estimated the person-hours required to perform TRI reporting. DOE then compiled this information into a report to be submitted to EPA. The completed surveys indicated that EPA's estimated burden is notably less than the burden DOE facilities have experienced for those activities needed to determine if a site meets the reporting requirements and to actually complete the TRI Form R report.

Additionally, DOE sites participated in a review of EPA's Advanced Notice of Proposed Rulemaking regarding the expansion of reporting elements to include chemical use reporting under EPCRA section 313 (TRI- Phase 3). DOE provided EPA with consolidated Headquarters and Operations Office comments regarding this Advanced Notice. The comments generally supported EPA's efforts to expand the information made available to the public but raised concerns about the potential for misunderstanding and the additional burden that facilities would face. DOE's comments are available on the Office of Environmental Policy and Assistance (OEPA) worldwide website at http://tis-nt.eh.doe.gov/oepa.

On May 1, 1997, EPA 's final rule regarding the addition of facilities in certain industry sectors was published in the *Federal Register*. Seven industry groups have been added to the list of facilities subject to the reporting requirements of section 313 of EPCRA and section 6607 of the PPA. Reporting for these facilities within these industry groups will begin with the 1998 reporting year.

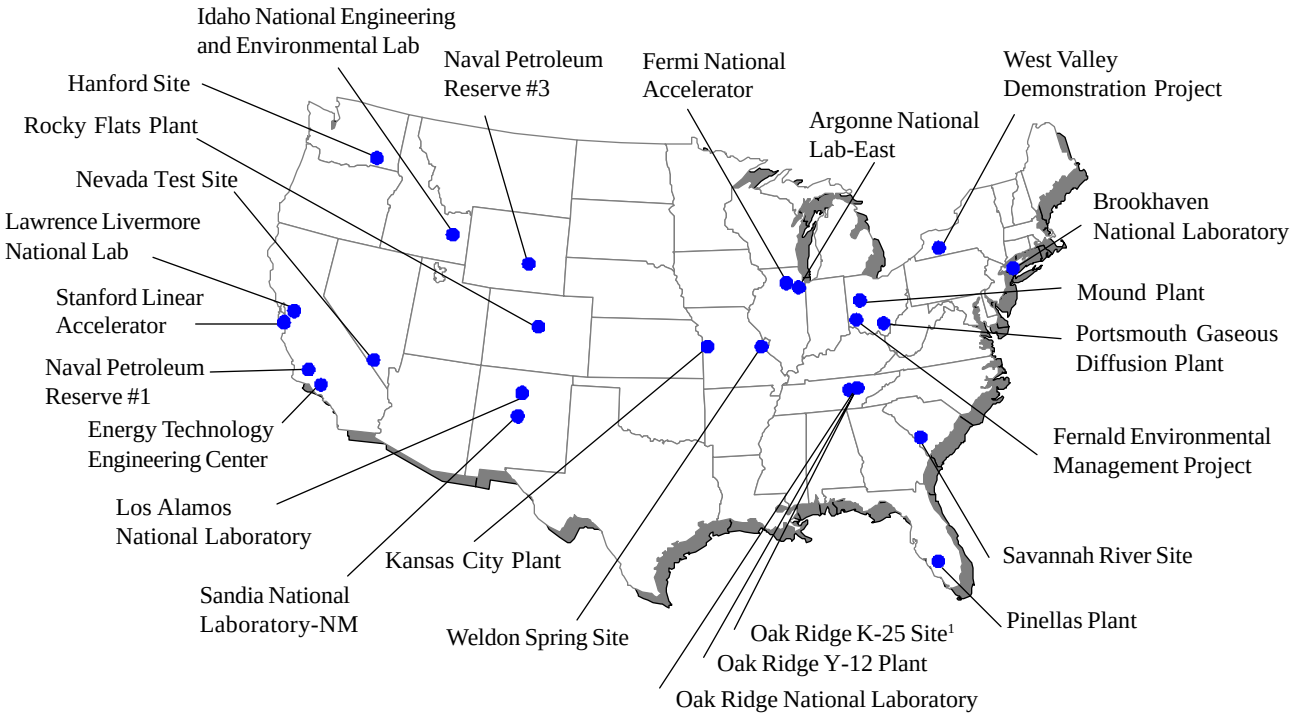
Furthermore, DOE sites are required by DOE Order 231.1, "Environmental , Safety, and Health Reporting" to prepare comprehensive environmental reports or Annual Site Environmental Reports (ASERs) each year. One section of each site report discusses compliance with the EPCRA and PPA reporting requirements. The guidance for the preparation of the ASER report has been revised so that sites will provide more complete information on EPCRA compliance.

Pollution Prevention Plans

Under Section 3-302(d) of Executive Order 12856, every "covered facility" must prepare a facility-wide pollution prevention plan no later than the close of 1995. This plan shall describe how the site intends to help the Department meet the complex-wide 50% reduction goal by December 1999.

Prior to the issuance of the Executive Order, DOE guidance issued by the Deputy Secretary of Energy established that all DOE waste-generating sites were to prepare a waste minimization program plan and a pollution prevention awareness program plan in accordance with DOE Order 5400.1, *General Environmental Protection Program*. Although DOE Order 5400.1 was modified on September 30, 1995, the sections pertaining to the preparation, submission, and revision of these plans remain intact. Also, these two plans have been consolidated into one pollution prevention plan which integrates the pollution prevention activities of all the waste generating organizations at that site. Since DOE facilities that report under EPCRA Section 313 are also waste generators, the DOE pollution prevention plan fulfills the requirement for a pollution prevention plan under Executive Order 12856.

To date, all of the sites (identified in Figure 3 below) that report under EPCRA Section 313 have prepared pollution prevention plans. Additionally, since DOE Order 5400.1 directs all DOE waste-generating facilities to prepare pollution prevention plans, numerous other DOE sites not reporting under EPCRA Section 313 also have plans in place. On February 27, 1997, guidance was issued for the preparation of site pollution prevention plans via their Operations Offices to Headquarters by May 31, 1997. DOE sites must update these plans every three years. Many DOE sites have the text portions of their plans available to the public through their Internet homepage.



[1]Now known as the East Tennessee Technology Park (ETTP)

Figure 3. DOE Sites which reported under EPCRA Section 313 (TRI) for the 1993, and/or 1994, and/or 1995 reporting year

Acquisition & Procurement

Section 3-303 of Executive Order 12856 directs each agency to set goals for eliminating or reducing the unnecessary acquisition of products containing extremely hazardous substances (EHSs) and toxic chemicals and for voluntarily reducing the manufacture, process, and use of EHSs and toxic chemicals. DOE also is expected to review specifications and standards documents to identify opportunities to eliminate or reduce the use of EHSs and toxic chemicals.

To date, DOE has not yet set specific numeric goals for this plan called for under Section 3-303 of Executive Order 12856. However, these goals are inherent in each site's efforts to help DOE achieve the 50% reduction in the releases and transfers of toxic chemicals by December 31, 1999. For example, at Oak Ridge National Laboratory, acquisition of new lead for shielding purposes has been stopped. Instead, researchers must use internal sources of lead for their shielding needs. In addition to limiting the acquisition of new lead, the cost of using internal stocks of lead is below the purchase price of new lead.

As a significant purchaser of materials and equipment, DOE is committed to promoting the purchase of less toxic, more durable, more energy-efficient materials, including products composed of recovered materials, for its own operations. The Department is committed to ensuring the use of environmentally sound practices in the procurement process, including updating specifications, contracts, and policies. This will ensure that DOE and its contractors act according to existing federal, state, and local regulations and DOE Orders and policies. In addition to the requirements of Executive Order 12856, DOE has established programs to implement the requirements of Executive Order 12843, *Procurement Requirements and Policies for Ozone-Depleting Substances*, Executive Order 12873, *Federal Acquisition, Recycling, and Waste Prevention*, and Executive Order 12902, *Energy Efficiency and Water Conservation at Federal Facilities.*

DOE programmatic offices and field facilities have continued to make strides in reducing the use of ozone-depleting substances. In 1996, Headquarters Office of Defense Programs received a DOE pollution prevention award for its work in facilitating procurement of ozone-friendly, energy efficient chillers. In early 1997, all DOE organizations that were substantive users of ozone-depleting chemicals transmitted information to Headquarters on their present and estimated future ozone-depleting substance inventory data and successful efforts and exemplary practices in eliminating use of these chemicals. A DOE report on this information is forthcoming.

To continue with the implementation of Executive Order 12873, the Office of Human Resources and Administration is partnering with the Office of Environmental Management's Pollution Prevention Program. In addition, the Department has issued its updated affirmative procurement guidance, Department of Energy Affirmative Procurement Program for P*roducts Containing Recovered Materials: 1996 Guidance*. This document continues the Department's aggressive affirmative procurement program by providing the necessary guidance to field sites regarding procurement goals and reporting requirements. The 1996 Guidance is available through EPIC (http://epic.er.doe.gov/epic/html/afproc96.sph).

Effective May 1, 1996, the Environmental Protection Agency added 19 new items containing recovered materials to the original five items. All 24 items are included in DOE's affirmative procurement program. In addition, EPA originally proposed to add 13 new items containing recovered materials to the Federal affirmative procurement program. EPA has submitted a notice dropping one of the proposed items. The proposed amendment would bring the total of EPA-designated items to 36. A final ruling is expected in November 1997.

DOE recently amended its acquisition regulation, the DEAR, to include a contract

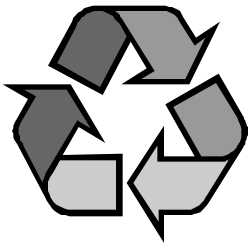
clause in all DOE management and operating contracts regarding the acquisition and use of environmentally preferable products and services and requiring compliance with the Executive Order 12873 and other requirements.

The Department's affirmative procurement goal is to increase procurement of EPA-designated recycled products to 100 percent, except where they are not commercially available competitively at a reasonable price or do not meet performance standards. The percentage of EPA-designated items containing recovered materials purchased by DOE has steadily increased, from 29 percent in FY 1992 to 46 percent in FY 1995 to 60 percent in FY 1996. In FY 1996, DOE purchased $31.4 million worth of EPA-designated items, of which $18.9 million contained recovered materials.

DOE has developed software packages that assist in tracking and reporting on recycled product procurement. They are: Recycled Materials Affirmative Procurement Tracking System and the Affirmative Procurement Reporting System.

Many DOE sites are working to make the procurement of environmentally preferable products easier. For example, staff at the Oak Ridge National Lab can access their homepage and get descriptions about the recycled content of products available to them through the Accelerated Vendor Inventory Delivery System.

Product Contains Recovered Materials And Is Recyclable



Product Is Recyclable

Pollution Prevention Technology

Technologies developed with industry and other federal agencies are applied to DOE operations and facilities.

Executive Order 12856 encourages agencies to develop and test innovative pollution prevention technologies and to develop partnerships with industry to assess and deploy such technologies. Work with external partners is beneficial to DOE's internal pollution prevention programs as technologies developed with industry and other federal agencies are applied to DOE operations and facilities. External partnerships also promote information exchange within and outside of DOE.

DOE has a long history of successful partnerships with the private sector and academia, particularly through its applied research programs. These partnerships take many forms; for example, they can be relatively simple technical assistance arrangements with small businesses or agreements involving collaborative technology development. Selected examples of DOE pollution prevention technology projects follow. These few examples do not fully represent the broad scope of pollution prevention technology being developed at DOE internally.

DOE and surrounding county governments have established a unique partnership that has led to the development of a regional landfill and technology center for waste minimization technology demonstrations at the Savannah River Site, located near Aiken, South Carolina. The project's long-term goal is focused on creating ways to reduce waste streams bound for disposal, which will ultimately extend the landfill's capacities, as well as developing other waste minimization projects.

Through DOE's Return-on-Investment (ROI) Program, DOE's Oak Ridge Reservation, located in Oak Ridge, Tennessee, will replace approximately 25 percent of their chemical-based photography with digital photography. This will help eliminate the use of silver halide, other chemicals, and quantities of contaminated rinse water.

Another ROI project began successful operation in November 1996. A paper pelletizer project was brought on-line, and began converting office waste at the Idaho Chemical Processing Plant (ICPP) into fuel for the Idaho National Engineering and Environmental Laboratory Coal Fire Steam Generation Facility, located in Idaho Falls, Idaho. About 80% of ICPP's waste now goes to the pelletizer, and ultimately to fuel, rather than the landfill.

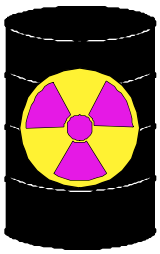
The Hanford Site, located in Richland, Washington, successfully started a project to decontaminate and recycle the metal contained in radiologically contaminated railroad cars. This recycling activity reduces the amount of waste requiring burial at Hanford, and generates revenue from the sale of recovered metal.

The Brookhaven National Laboratory, located in Upton, New York, and Environmental Solutions Corporation of Wyandanch, Long Island jointly developed the Ensol™ System. This system uses specifically developed bacteria nurtured on-site to treat grease laden wastes in sink-drain systems, which eliminates the need for chemical treatment.

The Pacific Northwest National Laboratory, located at Richland, Washington, developed a water treatment technology that removes and destroys organics, including hydrocarbons and chlorinated hydrocarbons, solvents, benzene and methanol. This process, which is known as the Thermochemical Environmental Energy System, is faster than biological wastewater treatment alternatives and does not generate sludge.

The Plant Engineering Department at the Stanford Linear Accelerator Center (SLAC), located at Menlo Park, California, avoided sending non-radioactive concrete megaliths to landfills by reusing the blocks in the reconstruction of experimental halls for SLAC's high energy physics research project . Some blocks were also used as retaining walls to prevent soil erosion.

DOE's Idaho National Engineering and Environmental Laboratory (INEEL), located in Idaho Falls, Idaho, designed shielded containers for the storage of transuranic radioactive wastes. The containers were made from contaminated lead from Idaho and stainless steel recovered from equipment at the K-25 Site in Oak Ridge, Tennessee (now known as East Tennessee Technology Park). The use of such containers will eliminate INEEL's use of remotely operated container-handling equipment for managing its waste, and reduce the need for using new lead and steel for the containers.



To encourage innovation, DOE's National Industrial Competitiveness through Energy, Environment, and Economics (NICE^3) program, awards grants each year for technology development projects which support and encourage energy efficiency, clean production, and economic competitiveness in U.S. industry. The NICE^3 initiative is a strategic partnership among state energy departments, companies, and DOE. The grants are awarded on a cost-shared basis, in which government funds boost the company's ability to develop promising technologies.

The Department wants to maximize the potential for recycle and reuse of discarded metals and construction materials when decommissioning DOE facilities. Recycling discarded metals and materials reduces waste disposal costs associated with decommissioning. DOE's "Recycle 2000" initiative to make waste containers from radioactively contaminated steel is helping to identify the clear economic benefits of re-using surplus materials rather than disposing of them.

Over the next ten years, more than 1,000 tons of precious metal-bearing electronic scrap will be generated from weapons dismantlement and non-weapons electronic equipment. DOE plans to recycle this scrap to avoid the costs of its disposal as hazardous waste. To coordinate collaboration between industry and government on electronic products disposition, DOE hosted a conference to explore DOE's potential for becoming a major supplier for the electronics recycling business. Within the Federal Domain, DOE is working with the U.S. Postal Service to recycle its older electronic equipment such as terminals, scales, and keyboards.

Pollution Prevention Funding

Section 4-404 of E.O. 12856 directs agencies to place a "high priority on obtaining funding and resources needed for implementing" the Executive Order. Prior to fiscal year (FY) 1994, pollution prevention funding at most DOE site's came from overhead accounts and could not be tracked directly as funding for pollution prevention. Currently, DOE sites are required to record budgets on activity data sheets (ADSs) by Departmental program - the ADSs are then compiled by Headquarters to develop the Department's five-year budget. Implementation funds are derived largely from site budgets and DOE's Return-On-Investment (ROI) program.

Beginning with the FY 1997 budget cycle, the Office of Environmental Management has elevated P2 to the status of a "national program."

Beginning with the fiscal year 1997 budget cycle, pollution prevention was elevated to the status of a "national program" within the Office of Environmental Management (EM). During the budget process, the individual site P2 budgets are consolidated into one budget item that can be defended at the Headquarters level and not compete with mission activities in site budgets. Once a budget is secured, EM allocates the money back to the field based on the waste reduction potential of each site.

The ROI program, which began in 1994, involves site proposals for implementation funds for activities or projects that will reduce operational costs in the short-term (less than 3 years). The program is based upon savings in operating and waste management costs compared to the dollars spent on pollution prevention. In 1994, 17 projects from 6 DOE Operations Offices were selected for funding based on technical merit and projected high return. In November 1995, 33 of 119 ROI proposals submitted by 8 DOE Operations Offices were recommended for funding. In 1996, 22 of these projects were funded. The ROI program has been a Headquarters managed and directed program, with funds dispersed by Headquarters, project by project. The first two rounds of projects demonstrated that the ROI concept works. Headquarters involvement will be phased out and selected Operations Offices will implement their own version of the program.

Table 5 shows total DOE pollution prevention budgets directly recorded on the ADSs and discretionary funds identified in the DOE's Environment, Safety and Health (ES&H) Management Plan.

Table 5: Total DOE Dedicated Pollution Prevention Budgets for FY 96 & 97 ($Millions)

	FY 1996 (Actual $ Spent)		FY 1997 (ES&H Plan)	
DOE Program	Direct Funded* (dedicated)	ES&H Plan** (discretionary)	Direct Funded* (dedicated)	ES&H Plan** (discretionary)
Environmental Management	22.6	0	23.7	0
Defense Programs	0	10.926	0	21.327
Energy Research	0	1.812	0	1.411
Fossil Energy	0	0.432	0	0.377
Other	0	0.357	0	0.431
TOTAL	**22.6**	**13.527**	**23.7**	**23.546**

* Dedicated funds identified by separate B&R codes and ADSs; funds are directly under the control of DOE Operations Office Waste Minimization Coordinators.

** Funds identified in ES&H Management Plan. Funds are not formally monitored by or under the direction of waste minimization coordinator staff in the field; benefits of funding are largely not documented.

Other E.O. 12856 Responsibilities

In addition to the Executive Order provisions previously discussed, the following paragraphs address the remaining Executive Order 12856 requirements.

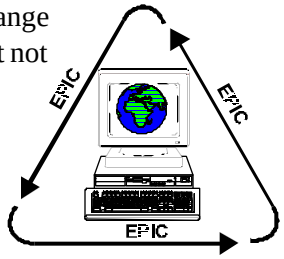
First, Section 5-501 of the Executive Order directed DOE to submit a preliminary list of facilities that would potentially meet the requirements for reporting under EPCRA by December 31, 1993. DOE submitted its final list of sites to EPA in April 1994. DOE identified 71 sites as potentially meeting any or all of EPCRA Sections 302-303, 311-312, and 313. The Department's list did not include those sites which potentially may report solely under EPCRA Section 304.

Section 4-405 of the Executive Order 12856 instructs the Administrator to establish a "Federal Government Environmental Challenge Program". The program is geared towards recognizing and rewarding those Federal agencies and facilities with outstanding environmental management performance.

On October 21, 1996, DOE endorsed EPA's "Code of Environmental Management Principles (CEMP). The principles emphasize pollution prevention, sustainable development, and key elements for a state-of-the-art environmental management program.

Executive Order 12856 Section 5-508 directs agencies to grant the public "ready access to all strategies, plans, and reports required to be prepared...under this order." In addition to site resources, including site advisory boards and public reading rooms, the Department also has two on-line sources for accessing DOE pollution prevention information.

The Department has an on-line pollution prevention information clearinghouse called EPIC. EPIC is available to both public and DOE users via the internet on the world-wide-web (http://epic.er.doe.gov/epic). EPIC has been redesigned to eliminate public user logins, increase server response, and provide upgraded search capabilities. Through EPIC, users can access a wide range of DOE documents, including, but not limited to: the DOE Pollution Prevention (P2) Strategy, DOE policy and guidance, DOE site project descriptions and accomplishments, pollution prevention opportunity assessments.



A second source for DOE pollution prevention information is the Office of Environmental Policy and Assistance's (EH-41) public web site (http://tis-nt.eh.doe.gov/oepa/) which is located within the Office of Environment, Safety and Health's Technical Information Service (TIS). Through the EH-41 web site, users can access the complete text of environmental laws, *Federal Register* notices, environmental data and reports, Environmental Guidance Documents and information on workshops and DOE compliance. Specifically, under "environmental data and reports", users will find a section titled "P2 and TRI Reporting". Under P2 and TRI reporting, users can currently access the TRI data reported by DOE sites from 1988 to 1995 and reports, including DOE's Executive Order 12856 Annual Reports and the DOE 33/50 Program Update Report.

Finally, Section 4-401 of the Executive Order addresses the convening of an Interagency Task Force. The DOE representative to the task force appointed by the Secretary of Energy is the Principal Deputy Assistant Secretary for Environmental Management. The task force has also created an Interagency Working Group to resolve issues regarding the implementation of Executive Order 12856. DOE representatives have been active participants in both the Task Force and the Working Group.

P2 Initiatives: Workshops, Awards, Guidance

In addition to the requirements of Executive Order 12856, DOE has conducted a number of other pollution prevention initiatives, including workshops, training sessions, conferences, awards programs, and the development of internal guidance. The following paragraphs highlight only a few of the pollution prevention initiatives undertaken by DOE.

The DOE Office of Environmental Policy and Assistance conducted workshops on TRI reporting in Denver and Washington, D.C. in April and May 1997. The DOE-specific modules, which immediately followed EPA workshops, provided DOE and contractor personnel with specific information regarding DOE-TRI reporting and provided an open forum for answering DOE-specific questions.

DOE's Office of Defense Programs (DP) held its eleventh biannual pollution prevention technology workshop in Seattle on April 22-24, 1997. The workshop allowed time for attendees to compare and exchange ideas on the success of pollution prevention programs.

On March 6, 1997, the Office of Environmental Restoration conducted a workshop on "Pollution Prevention and Waste Minimization Principles" during Environmental Restoration-97 in Tucson, Arizona. The workshop was successful in bringing together environmental restoration program and project managers, engineers and waste management specialists to exchange ideas and methods for achieving pollution prevention during site cleanup activities. Details of the discussions and presentations are available in the Proceedings for ER/WM-97.

On August 26-28, 1997, DOE and the Savannah River Operations Office sponsored the 13th annual DOE Pollution Prevention Conference. The conference was held in Atlanta, Georgia and consisted of three days of exhibits, oral presentations, and poster sessions. The conference provided a forum for DOE, other federal and state agencies, and the private sector to share success stories and exchange information about pollution prevention techniques.

On January 14-16 and May 13-15, 1997, DOE's pollution prevention opportunity assessment (PPOA) training course was held at the Kansas City Plant (KCP). The training offered an integrated set of tools that help to incorporate pollution prevention and energy conservation into routine and non-routine processes, projects, and activities to DOE personnel and contractors. In addition, the training provided KCP the opportunity to share their methodology and experiences with the five-year-old PPOA program. Several State environmental offices and the EPA Region 7 Office have sent representatives to this training. In 1997, the PPOA training was expanded to include environmental restoration projects and activities.

Beginning in 1994, the Department has annually honored the work performed by DOE and contractor employees in preventing waste and pollution. The DOE Pollution Prevention Awards Program was designed to meet DOE pollution prevention incentive and technology transfer goals. In 1996, 11 awards were presented in categories ranging from solid waste recycling to source reduction to affirmative procurement. In 1997, 15 awards were presented out of 73 nominations received in 12 categories.

In December 1996, DOE Chicago Operations Office and Argonne National Laboratory were named "Star Partners" by the Illinois's EPA. The award is granted to industry and business for leadership in protecting the environment, in keeping the surrounding community informed about environmental issues, and in continuing to use new research to help protect the environment.

The Pantex Plant and the Savannah River Site were among the top winners of the 1996 White House Closing the Circle Awards. These sites were awarded for their waste prevention programs. DOE honored eleven national pollution prevention awards of which two were received by the Kansas City Plant. The plant was honored for its success in reducing the use and disposal of hazardous chemicals and for its partnership with Hewlett Packard in developing a non-hazardous precision cleaning agent.

The 1996 guidance on incorporating P2 into the National Environmental Policy Act Process was jointly prepared by the Office of Environmental Management's Offices of Pollution Prevention, and Environmental and Regulatory Analysis. The guidance provides a standard approach through the use of P2 "checklists" to ensure consistency. NEPA preparers and reviewers are expected to use the guidance to address P2 opportunities for all new projects or facility modifications that require NEPA documentation. Incorporating P2 principles into the NEPA process will help sites meet the Department's overall P2 goals.

On October 15, 1996, the P2 performance measures for FY 1997 and the reporting format guidance were distributed by DOE's Office of Pollution Prevention. The performance measures for FY 1997 are: the number of completed pollution prevention projects and associated costs, the cost savings/waste reduction achieved by the completed projects, and the affirmative procurement percentage achieved for each Operations Office. The first quarterly reports from the Operations Offices on their P2 Programs were submitted on January 30, 1997.

On December 26, 1996 the Office of Environmental Management (EM) issued guidance on incorporating pollution prevention principles into the contracting process. All EM field organizations are encouraged to use this guidance. This procedure will help reduce the generation of waste by emphasizing accountability of the entire EM workforce. The guidance includes examples from DOE sites that have been successful at providing incentives to minimize wastes.

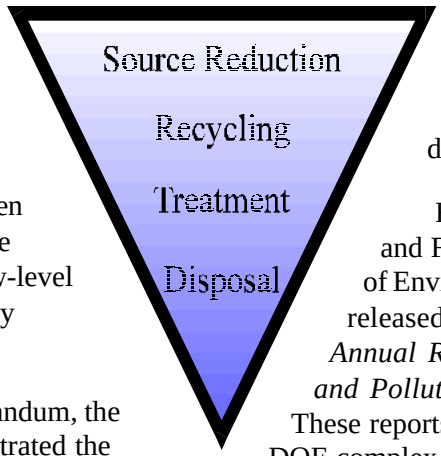
On March 21, 1996, the Office of Environmental Management issued the final version of the "Implementation Plan for the Generator Set-Aside Fee" pilot demonstration was issued as guidance to the pilot sites. On January 7, 1997, the final report of assessments and recommendations was issued for the generator set-aside fee pilot program. The Pollution Prevention Executive Board agreed on February 20, 1997, to continue the program and to expand it to other Department sites. The program was developed to encourage waste generator accountability, promote waste reduction, and to provide a source of funds for P2 project implementation.

DOE issued Order 430.2, In-house Energy Management, on June 13, 1996. The Order sets forth requirements of laws, Executive Orders, and Federal regulations for energy efficiency, use of renewable energy, and water conservation at Federal facilities. On November 26, 1996, the Secretary of Energy signed the memo "Achieving Cost Savings at DOE Facilities Through Energy Management". The memo requested that the Assistant Secretary for Energy Efficiency and Renewable Energy, in partnership with Program Offices, develop FY 1997 performance agreements with Field Elements for implementation of the DOE order.

P2 Initiatives: Waste Reduction

DOE's pollution prevention strategy is to reduce the generation of all waste streams and thus minimize the impact of departmental operations on the environment.

Compared to other sources of DOE waste, the generation of toxic chemical releases and transfers at DOE facilities represents a small portion of the Department's total annual waste generation. Since DOE's pollution prevention strategy is to "reduce the generation of all waste streams", many of the Department's pollution prevention efforts, including the allocation of funds for pollution prevention, have been focused more on reducing the generation of radioactive, low-level mixed, hazardous and sanitary wastes.



In a May 3, 1996 memorandum, the Secretary of Energy demonstrated the Department's commitment to pollution prevention by establishing goals for routine operations, all operations, and affirmative procurement (See Table 6 and Appendix A). These goals were developed in accordance with recent Executive Orders and internal departmental guidance. Similar to the TRI goal established in accordance with E.O. 12856, these goals are to be achieved by December 31, 1999 and will be measured annually against a 1993 baseline. DOE field sites are to set site-specific goals in their P2 plans to assist in achieving the departmental goals.

Further, in September 1996 and February 1997, DOE's Office of Environmental Management released the *1994 and 1995 Annual Report of Waste Generation and Pollution Prevention Progress.* These reports present and analyze the DOE complex-wide waste generation and pollution prevention activities at each reporting site. The reports concluded that routine operations waste generation decreased 37% from 1994 to 1995, and 43% overall from 1993 to 1995.

Table 6:DOE Source Reduction and Recycling Performance, Compared to 1993 Baseline[1]

Goal	1993 Baseline	1996 % Reduction[2]	Dec. 31, 1999 Goal
Reduce the total releases and off-site transfers for treatment and disposal of toxic chemicals	4.68 million pounds	87%	50%
Reduce the generation of radioactive waste*	37,392 cubic meters	61%	50%
Reduce the generation of low-level mixed waste	3,524 cubic meters	58%	50%
Reduce the generation of hazardous waste	7,921 metric tons**	93%	50%
Reduce the generation of sanitary waste	122,966 metric tons	19%	33%
Divert sanitary waste for recycling	***	37%	33%
Affirmative procurement of EPA-designated recycled products	***	60%	100%

[1] U.S. Department of Energy Pollution Prevention Program Plan 1996 (DOE/S-0118)
[2] 1996 Waste Generation and Pollution Prevention Progress Report-Draft
* Represents low-level waste only.
** Includes RCRA-regulated, state-regulated and TSCA- regulated wastes.
***Recycling and affirmative procurement baselines are established annually.

Secretary of Energy

Memorandum

May 3, 1996

The Secretary of Energy

Washington, DC 20585

May 3, 1996

MEMORANDUM FOR HEADS OF DEPARTMENTAL ELEMENTS

FROM: HAZEL R. O'LEARY

SUBJECT: Departmental Pollution Prevention Goals

The Department of Energy pollution prevention strategy is to reduce the generation of all waste streams and thus minimize the impact of departmental operations on the environment. Preventing pollution also reduces risks to the health and safety of workers and the general public and saves scarce budget dollars. To demonstrate the Department's commitment to pollution prevention, we have set the following goals to be achieved by December 31, 1999, using calendar year 1993 as a baseline year.

For Routine Operations:

- Reduce by 50 percent the generation of radioactive waste.
- Reduce by 50 percent the generation of low-level mixed waste.
- Reduce by 50 percent the generation of hazardous waste.
- Reduce by 33 percent the generation of sanitary waste.
- Reduce by 50 percent total releases and off-site transfers for treatment and disposal of toxic chemicals.

For All Operations, Including Cleanup/Stabilization Activities:

- Recycle 33 percent of sanitary waste.

For Affirmative Procurement:

- Increase procurement of Environmental Protection Agency-designated, recycled products to 100 percent, except where they are not commercially available competitively at a reasonable price or do not meet performance standards.

Operations Offices will direct sites under their purview to set site-specific goals to assist in achieving the departmental goals. Progress toward meeting the departmental goals will be reported annually to me. It is the responsibility of each Federal and contractor manager to work diligently to meet these goals; to aggressively seek ways to reduce the amount of pollutants generated within the workplace; and to conserve, reuse, and recycle resources.

Department of Energy

Pollution Prevention

Strategy

UNITED STATES DEPARTMENT OF ENERGY
POLLUTION PREVENTION STRATEGY

POLICY STATEMENT:

"The Department of Energy (DOE) embraces pollution prevention as its strategy to reduce the generation of all waste streams and thus minimize the impact of departmental operations on the environment, as well as improving safety of operations and energy efficiencies. I expect the Department to continue the leadership shown by our voluntary compliance with the Emergency Planning and Community Right-to-Know Act (EPCRA) and our participation in the Environmental Protection Agency's 33/50 program which focuses on near-term pollution prevention efforts of 17 priority toxic chemicals."

"Recognizing that pollution prevention is the Department's preferred approach to meeting its environmental responsibilities, I am directing that Cognizant Secretarial Offices, working in conjunction with the Pollution Prevention Executive Board, identify, plan, and allocate funds for field implementation of waste minimization and pollution prevention activities during the departmental budget review process. This information will be used to provide an identified budget each year dedicated to pollution prevention activities." -- Secretary Hazel R. O'Leary, 12/28/93

RESPONSIBLE INDIVIDUAL:

DOE is committed to ensuring the success of its pollution prevention goals. Because of this commitment, the Department has designated Deputy Secretary of Energy William H. White as the senior manager responsible for coordination of the Department's efforts in pollution prevention. Mr. White may designate another individual to act on his behalf should the need arise.

BACKGROUND:

The Department of Energy has had a longstanding commitment to implementing the principles contained in Executive Order 12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements." DOE facilities have been active in complying with EPCRA since its passage in 1986. The Department has provided guidance and training materials on the general requirements of EPCRA, and specific guidance and training on Toxics Release Inventory (TRI) reporting. In fact, the Department has led the Federal sector in TRI reporting by voluntarily committing to report TRI releases prior to the issuance of the Executive Order, and has worked closely with EPA during 1992 and 1993 on resolving issues of Federal facility TRI reporting.

The Department has also been a leader in the development and implementation of pollution prevention programs and activities, including voluntary participation in EPA's 33/50 program. In 1988, 12 DOE facilities filed Form R reports with EPA as sites which used or stored chemicals to be reported under TRI. Since then, DOE facilities have met, ahead of schedule, the Department's goal of a 50 percent reduction in TRI releases and transfers of the seventeen priority toxic chemicals covered by the EPA 33/50 program. In addition, facility-specific pollution prevention plans are required under DOE Order 5400.1, *General Environmental Protection Program*, and the Department has issued guidance to its facilities on the preparation of those plans. DOE has actively involved nearly all Departmental organizations in pollution prevention activities at the staff level through the Waste Reduction Steering Committee, and at the senior management level through the Pollution Prevention Executive Board, chaired by the Deputy Secretary of Energy.

The combined effort of these groups produced the Department's 1994 Waste Minimization/Pollution Prevention Crosscut Plan, as well as a program to identify and implement pollution prevention projects which can produce successful results in the near-term. In addition, the Department has established a pollution prevention funding mechanism through the Department-wide Environment, Safety and Health Management Plan. This will ensure that pollution prevention programs are funded that reduce toxic emissions and waste generation in a cost effective manner.

Every effort has been, and will continue to be, made to involve the public and other stakeholders in monitoring the Department's progress in meeting the requirements of Executive Order 12856.

The attached bibliography details past Departmental efforts to implement pollution prevention through Secretarial memoranda, guidance documents, and planning documents. The objectives and goals which follow build upon the previous efforts and upon the Department's other pollution prevention successes to date.

OBJECTIVE 1. EFFECTIVELY INSTITUTIONALIZE THE POLLUTION PREVENTION ETHIC THROUGH TRAINING AND AWARENESS IN ALL MISSION AREAS

DOE OFFICES OF RESPONSIBILITY: All Cognizant Secretarial Offices

Sub-objective 1.1 Develop an environmentally aware DOE community through education and training in pollution prevention so that all personnel understand the DOE commitment to utilize pollution prevention through source reduction, where practicable, as the primary means of achieving and maintaining compliance with all applicable Federal, State, and local environmental regulations.

- Equip our work force with the pollution prevention skills to accomplish DOE's missions while protecting the environment.
- Institutionalize and continually improve appropriate pollution prevention training for our personnel.
- Integrate pollution prevention measures into all operations.

Sub-objective 1.2 Promote pollution prevention through multimedia outreach/awareness programs and partnerships.

- Strengthen working relationships with regulators at all levels.
- Foster partnerships with stakeholders and industry by:
  - participating in local community emergency planning;
  - enhancing the coordination and effectiveness of local emergency response capabilities;
  - providing communities with information on toxic chemical use and release by reporting under TRI;
  - promoting the elimination of the use of hazardous substances, a reduction in toxic emissions, and a reduction in the generation of hazardous waste and DOE facilities; and
  - encouraging affirmative procurement of non hazardous chemicals and materials and products with recycled content, and the reuse and recycling of materials when possible.
- Demonstrate innovative leadership in and commitment to pollution prevention.
- Disseminate information on pollution prevention technologies throughout the DOE complex.
- Work with other Federal agencies on information exchange.

Sub-objective 1.3 Encourage and recognize outstanding pollution prevention efforts through existing and new awards/incentive programs.

OBJECTIVE 2: REDUCE RELEASES AND OFF-SITE TRANSFERS OF TOXIC CHEMICALS TO THE ENVIRONMENT

DOE OFFICES OF RESPONSIBILITY: All Cognizant Secretarial Offices

Sub-objective 2.1 Minimize releases of toxic chemicals to the environment and off-site transfers of such toxic chemicals. To the maximum extent possible, such reductions shall be achieved through source reduction.

GOAL: By December 31, 1999, achieve a Department-wide 50 percent reduction of total releases of toxic chemicals to the environment and off-site transfers of such toxic chemicals from the baseline year (DOE will determine the baseline year after further study).

Sub-objective 2.2 Establish site-specific goals to reduce the generation and use of radioactive and other hazardous materials to the extent practicable.

Sub-objective 2.3 Develop, maintain, and implement pollution prevention plans at each major facility. These plans may include baselines, pollution prevention opportunity assessments, and investment strategies.

Sub-objective 2.4 Implement cost-effective pollution prevention at all DOE facilities.

Sub-objective 2.5 Submit annual reports to the EPA Administrator regarding progress made toward achievement of the above goal, as well as progress made in complying with all other aspects of Executive Order 12856.

OBJECTIVE 3: INCORPORATE POLLUTION PREVENTION POLICY INTO THE ACQUISITION PROCESS

DOE OFFICES OF RESPONSIBILITY: All Cognizant Secretarial Offices

Sub-objective 3.1 Integrate environmental considerations into acquisition strategies, plans, and the source selection process. Employ life cycle analyses and total cost accounting principles in procurements, as appropriate.

GOALS: 1. Establish a Department-wide plan, with goals, to eliminate or reduce unnecessary acquisitions of hazardous substances or toxic chemicals.

2. Establish a Department-wide plan, with goals, to reduce DOE manufacture, process, and use of extremely hazardous substances and toxic chemicals.

Sub-objective 3.2 Integrate pollution prevention considerations when developing mission needs and when developing and revising acquisition documentation.

GOAL: By August 3, 1995, review DOE standards and specifications to identify opportunities to eliminate or reduce unnecessary acquisitions of hazardous or toxic substances, and complete all necessary revisions by December 31, 1998.

OBJECTIVE 4: ACHIEVE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW REPORTING

DOE OFFICES OF RESPONSIBILITY: All Cognizant Secretarial Offices

Sub-objective 4.1 Develop and maintain a comprehensive inventory of toxic chemicals, extremely hazardous substances, and hazardous chemicals at each DOE facility.

Sub-objective 4.2 Ensure that each facility fulfills all EPCRA reporting responsibilities, including:

- Emergency planning notification.
- All other information needed for local emergency planning.
- Chemical inventory information to local emergency planning committees.
- Emergency notification to local emergency response teams.
- TRI reporting.

OBJECTIVE 5: ADDRESS OTHER ENVIRONMENTAL QUALITY ISSUES AND POLLUTION PREVENTION FOCUS AREAS

DOE OFFICES OF RESPONSIBILITY: All Cognizant Secretarial Offices

Sub-objective 5.1 Address the requirements of Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," signed by the President on February 11, 1994. This Executive Order focuses on achieving environmental justice by promoting non-discrimination in DOE's programs that affect human health and the environment.

Sub-objective 5.2 Promote water conservation, energy efficiency, and use of renewable energy technologies, as required by Executive Order 12902, "Energy Efficiency and Water Conservation at Federal Facilities."

- Minimize life cycle costs by utilizing energy efficiency, water conservation, and renewable energy resources in the design and construction of new facilities, as well as in the modification of existing facilities.

GOALS: 1. By December 31, 2004, achieve a 30 percent Department-wide reduction in energy consumption from the 1985 baseline.

2. By December 31, 2004, increase Department-wide energy efficiency by at least 20 percent from the 1990 baseline.

Sub-objective 5.3 Optimize the use of environmentally preferable materials in the planning, construction, and maintenance of facilities. Establish and promote efficient material/energy-use practices through conservation, reutilization, materials substitution, recycling, affirmative procurement, and the creation of markets for recycled materials, as required by Executive Order 12873, "Federal Acquisition, Recycling, and Waste Prevention."

Sub-objective 5.4 Incorporate pollution prevention principles, techniques, and mechanisms into all planning and decision making processes. Evaluate and report those efforts in documentation required by the National Environmental Policy Act.

OBJECTIVE 6: DEVELOP, TRANSITION, AND APPLY INNOVATIVE POLLUTION PREVENTION TECHNOLOGIES

DOE OFFICES OF RESPONSIBILITY: All Cognizant Secretarial Offices

Sub-objective 6.1 Develop and support a DOE Strategic Plan to identify and prioritize research, development, demonstration, testing, and evaluation (RDDT&E) needs.

- Focus pollution prevention RDDT&E on developing and implementing critical technologies needed for source reduction.
- Encourage user participation in formulating requirements.

Sub-objective 6.2 Identify and fund high priority RDDT&E programs.

- Identify, develop, and implement a RDDT&E plan.

Sub-objective 6.3 Coordinate DOE's pollution prevention RDDT&E programs with those of other Federal agencies, academia, and private industry.

- Identify material and process substitutes in DOE technologies that have government-wide as well as commercial application for expedited implementation.
- Foster cooperative interagency, Federal-State, and government-industry partnerships to solve pollution prevention issues.
- Actively demonstrate and implement "off-the-shelf" technologies that ensure the mission capability of DOE facilities.
- Integrate pollution prevention measures into all appropriate operations.

Sub-objective 6.4 Encourage the development of strong domestic and foreign markets for DOE-developed, innovative pollution prevention technologies.

- Develop, demonstrate, test, evaluate, and implement innovative pollution prevention technologies at DOE facilities.
- Forge partnerships with environmental technology firms abroad to export DOE-developed pollution prevention technologies.

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